UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/00772

August 23, 2002

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Attn: Judy Linton
Regulatory Branch, CENWP-OP-G
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for Phase II Mitigation by Port of Portland Required by Consent Decree at Rivergate Industrial Area, Multnomah County, Oregon (Corps No. 2001-00247).

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of proposed mitigation (Phase II) by the Port of Portland at Rivergate Industrial Area Multnomah County, Oregon. In this Opinion, NOAA Fisheries concluded that the proposed action is not likely to jeopardize the continued existence of ESA-listed Snake River sockeye salmon (*Oncorhynchus nerka*), Snake River fall chinook salmon (*O. tshawytscha*), Snake River spring/summer chinook salmon, Upper Columbia River spring-run chinook salmon, Lower Columbia River chinook salmon, Upper Willamette River chinook salmon, Columbia River chum salmon (*O. keta*), Snake River steelhead (*O. mykiss*), Upper Columbia River steelhead, Middle Columbia River steelhead, Upper Willamette River steelhead, and Lower Columbia River steelhead, or destroy or adversely modify designated critical habitat(s). As required by section 7 of the ESA, NOAA Fisheries included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This Opinion also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Christy Fellas of my staff in the Oregon Habitat Branch at 503.231.2307.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Gerry Meyer, Port of Portland
Denise Rennis, Port of Portland

Endangered Species Act - Section 7 Consultation & Magnuson-Stevens Act Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Mitigation by Port of Portland at
Rivergate Industrial Area Required by Consent Decree (Phase II),
Multnomah County, Oregon
(Corps No. 2001-00247)

Agency:	Army Corps of Engineers, Portland District
Consultation Conducted By:	NOAA Fisheries, Northwest Region
Date Issued:	August 23, 2002
Issued by:	for Michael R Crouse D. Robert Lohn Regional Administrator
Refer to:	**2002/00772**

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1. ENDANGERED SPECIES ACT

1.1 Background

On July 9, 2002, the National Marine Fisheries Service (NOAA Fisheries) received a letter dated May 15, 2002, from the Corps of Engineers (COE) requesting formal consultation on the issuance of a permit to the Port of Portland (Port) for a proposed mitigation project in the Rivergate Industrial Area. Based on adequate information received from the COE, NOAA Fisheries has prepared this biological opinion (Opinion). In the May 15, 2002, letter, the COE determined that Snake River sockeye salmon (*Oncorhynchus nerka*), Snake River spring/summer chinook salmon (*O. tshawytscha*), Snake River fall chinook salmon (*O. tshawytscha*), Lower Columbia River steelhead (*O. mykiss*), Upper Columbia River steelhead (*O. mykiss*), Snake River steelhead (*O. mykiss*), Middle Columbia River steelhead (*O. mykiss*), Columbia River chum salmon (*O. keta*), Lower Columbia River chinook salmon (*O. tshawytscha*), Upper Columbia River spring-run chinook salmon (*O. tshawytscha*), Upper Willamette River steelhead (*O. mykiss*) and Upper Willamette River chinook (*O. tshawytscha*) may occur within the project area and that the proposed project is "likely to adversely affect" (LAA) the subject listed species or their designated critical habitats. References and dates regarding listing status, critical habitat designations and ESA section 4(d) take prohibitions are found in Table 1.

NOAA Fisheries has prepared this Opinion to address impacts to these species as a result of the proposed project. The objective of this Opinion is to determine whether the actions included in the mitigation plan are likely to jeopardize the continued existence of the above listed species or destroy or adversely modify critical habitat.

1.2 Proposed Action

The entire project includes a number of activities at seven separate sites within the Rivergate Industrial Area required by a Consent Decree issued by the U.S. District Court on January 31, 2001, in Jones v. Thorne. All required actions at Lombard Street Bridge, Columbia Slough, North and South Banks, and Leadbetter Peninsula have been covered in the Phase I consultation signed December 17, 2001 (refer to: NOAA Fisheries 2001/00947). The proposed action in this consultation is limited to the 40 Mile Loop Trail portion of the project.

The purpose of the proposed project is to construct approximately 7,540 feet of the City of Portland's 40-Mile Loop trail along the Columbia Slough in the Rivergate Industrial Park. The Port of Portland is building the trail to satisfy the requirements of a U.S. District Court Consent Decree that resulted from a legal settlement between the Port and Mr. William Jones, as well as an Enforcement Consent Decree that resulted from the settlement of a cross-claim against the Port by the COE.

The proposed trail would be located on the western end of the Rivergate Industrial Park and would extend along the east bank of the Columbia Slough from the Lombard Street Bridge to the Port's southern property line near the St. John's Landfill. Approximately 5,274 feet of the trail

would be located within wetland areas. The trail alignment has been redesigned to minimize the removal of trees and maximize the distance from the Columbia Slough, as a result of discussions between the Port, COE, NOAA Fisheries and the City of Portland.

Within the project site, construction activities would involve both the excavation and removal of material from existing wetlands. Initially, approximately 5,000 cubic yards (cy) of sand and native soil would be excavated and removed from within the trail footprint to create a uniform grade for the trail base. Of this material, approximately 4,700 cy would be removed from below the ordinary high water (OHW) elevation of the Columbia Slough. All excavated material would be hauled to upland disposal sites at the Portland International Airport, Portland Shipping Terminal 6, and/or other locations within the Rivergate Industrial Park.

Following excavation, approximately 5,410 cy of fill would be placed within the project footprint to construct the proposed trail and associated structures. Approximately 4,585 cy of this material would be placed below OHW. Trail dimensions include a trail base that would not exceed a width of 16 feet toe to toe (approximately 13 feet in average width overall), and a height of 3 feet above native soil. On top of this base, an 8-foot-wide paved surface with a 2-foot-wide aggregate shoulder on either side would be constructed. Construction techniques would vary based on site conditions, but would generally involve the placement of a soil sub-base, an aggregate trail base, and an asphalt or concrete paved surface. In areas where the trail would require up to 3 feet of fill, both the sub-base and base fill would be wrapped with geotextile fabric to keep them from encroaching beyond the 16-foot maximum width. To provide drainage for the trail embankment, and to allow water to flow in and out of the wetlands during flood events, five concrete bridge structures (*i.e.*, box culverts), nine rock fill drains, and 177 linear feet of trench drain would be constructed along the proposed trail.

As a part of this project, and considered in the fill and removal amounts, the Port would remove a 60" culvert that extends from the Leadbetter excavation area across the proposed 40 mile loop trail to the Columbia Slough, a distance of approximately 80 feet. Excavation would result in the removal of approximately 100 cy of sand and gravel. The trench left following removal of the culvert would require approximately 300 cy of fill. The fill would consist of the native soils excavated from adjacent project areas, which are under a separate permit. Turbidity curtains would be erected to avoid reducing water quality in the slough during culvert removal and fill activities. The disturbed area would be reseeded with an erosion control mix, and willow stakes placed along the bank of the slough. The riprap supporting the culvert and extending into the slough would be left in place, since its removal would require in-water work and would create substantial turbidity during removal and refilling activities. At present, it provides some rocky lower bank habitat along an otherwise continuous bank of native soil. No in-water work would be necessary as all removal/fill activities would occur landward of the slough.

Also as part of this project, the Port would cut back and plug a 60" culvert which presently extends approximately 10 feet beyond the natural bank into a backwater embayment of the slough. Plugging with concrete would occur from the top of the culvert, however some work

below OHW may be required to cut back the culvert flush with the slope. Culvert cutting will take place during low water, and no in-water work is envisioned.

Using the below-OHW trail length of 5,274 feet, and an average width of 13 feet, the total unavoidable wetland impacts for this project have been calculated to be approximately 1.6 acres. This acreage includes approximately 1.2 acres of palustrine emergent wetlands, and 0.4 acres of palustrine forested wetlands. The proposed wetland mitigation plan is to restore 5.0 acres with initial removal of non-native vegetation (*i.e.*, reed canary grass and Himalayan blackberry), followed by the planting of native trees and shrubs. The overall goal is to establish a forested wetland where a degraded emergent wetland currently exists.

In addition to these impacts, approximately 4.6 acres of palustrine emergent wetlands, dominated by reed canarygrass, would be temporarily impacted during the construction process of the trail. These impacts would be associated with equipment access and would be limited to a 25-foot area on either side of the proposed trail centerline, with most of the work occurring within the 16-foot trailway section. Work occurring outside the 16-foot section would include access by rubber-tired and tracked construction equipment to facilitate trail construction. Following construction, all disturbed ground would be cultivated to alleviate compaction, raked smooth to match surrounding grades, and seeded with a native grass and forb mixture. Thorny plants, such as rose, Oregon grape and salmonberry would be planted along the outer 20 feet of the temporary impact zone to discourage users of the trail from leaving the paved surface.

1.3 Biological Information and Critical Habitat

The action area is defined by NOAA Fisheries regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area for this project includes the north and south banks of the Columbia Slough, from the mouth to St. John's Landfill and adjacent uplands sites, all located within the Port of Portland's Rivergate Industrial Area.

The Columbia and Willamette Rivers and the Columbia Slough serve as a migration area for all listed species under consideration in this Opinion. The action area may also serve as a feeding and rearing area for juvenile chum and sub-yearling chinook salmon. Essential features of the area for the species are: (1) Substrate; (2) water quality; (3) water quantity; (4) water temperature; (5) water velocity; (6) cover/shelter; (7) food (juvenile only); (8) riparian vegetation; (9) space; and (10) safe passage conditions (50 CFR 226). The proposed action may affect the essential habitat features of water quality and riparian vegetation.

References for further background on listing status, biological information and critical habitat elements can be found in Table 1.

Table 1.1 References for Additional Background on Listing Status, Biological Information, Protective Regulations, and Critical Habitat Elements for the ESA-Listed Species Considered in this Consultation.

Species ESU	Status	Critical Habitat[1]	Protective Regulations	Biological Information, Historical Population Trends
Chinook salmon (*O. Tshawytscha*)				
Snake River fall-run	T 4/22/92; 57 FR 14653[2]	12/28/93; 58 FR 68543	7/10/00; 65 FR 42422	Waples *et al.* 1991b; Healey 1991
Snake River spring/summer-run	T 4/22/92; 57 FR 14653[2]	10/25/99; 64 FR 57399[3]	7/10/00; 65 FR 42422	Matthews and Waples 1991; Healey 1991
Lower Columbia River	T 3/24/99; 64 FR 14308		7/10/00; 65 FR 42422	Myers *et al.*1998; Healey 1991
Upper Willamette River	T 3/24/99; 64 FR 14308		7/10/00; 65 FR 42422	Myers *et al.*1998; Healey 1991
Upper Columbia River spring-run	E 3/27/99; 64 FR 14308		7/10/00; 65 FR 42422	Myers *et al.*1998; Healey 1991
Chum salmon (*O. keta*)				
Columbia River	T 3/25/99; 64 FR 14508		7/10/00; 65 FR 42422	Johnson *et al.* 1997; Salo 1991
Sockeye salmon (*O. nerka*)				
Snake River	E 11/20/91; 56 FR 58619	12/28/93; 58 FR 68543	11/20/91; 56 FR 58619	Waples *et al.* 1991a; Burgner 1991
Steelhead (*O. mykiss*)				
Lower Columbia River	T 3/19/98; 63 FR 13347		7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Middle Columbia River	T 3/25/99; 64 FR 14517		7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Upper Columbia River	E 8/18/97; 62 FR 43937		7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Upper Willamette River	T 3/25/99; 64 FR 14517		7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Snake River Basin	T 8/18/97; 62 FR 43937		7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996

[1] Critical habitat designations (excluding Snake River chinook and sockeye salmon) were vacated and remanded on May 7, 2002 by a Federal Court

[2] Also see 6/3/92; 57 FR 23458, correcting the original listing decision by refining ESU ranges.

[3] This corrects the original designation of 12/28/93 (58 FR 68543) by excluding areas above Napias Creek Falls, a naturally impassable barrier.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify designated critical habitat. This analysis involves the initial steps of (1) Defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

Furthermore, NOAA Fisheries evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NOAA Fisheries must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NOAA Fisheries identifies those effects of the action that impair the function of any essential element of critical habitat. If NOAA Fisheries concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent measures available.

For the proposed action, a jeopardy analysis by NOAA Fisheries considers direct or indirect mortality of fish attributable to the action. A critical habitat analysis by NOAA Fisheries considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing salmon under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the listed species to survive and recover to a naturally-reproducing population level, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of

the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing and migration. The current status of the listed species, based upon their risk of extinction, has not significantly improved since the species were listed.

1.4.2 Environmental Baseline

The Port of Portland plans to conduct a series of mitigation projects at the Rivergate Industrial Area site located along the lower Columbia Slough. The Columbia Slough discharges to the Willamette River near Kelley Point Park and the confluence of the Columbia and Willamette Rivers. The lower slough is accessible to salmonids via the Willamette River and splits at river mile (RM) 1.5 into the north slough and mainstem. The mainstem of the slough is accessible until RM 8.2 where a levee and pump station prevent further access (Ellis 2001). The Columbia Slough is tidal riverine habitat, and is used by salmonids as refugia during migration and for rearing.

The slough was originally a series of wetlands and marshes; it is now a highly managed water system with dikes and pumps to provide watershed drainage and flood control for the surrounding lowlands (ODEQ 1998). The slough is listed on the Oregon Department of Environmental Quality (DEQ) 303(d) list as water quality limited for: Bacteria, phosphorus, pH, dissolved oxygen, chlorophyll a and temperature (ODEQ 1998). According to Ellis (2001), the Columbia Slough has few properly functioning environmental indicators including: Water quality, access, habitat elements, channel conditions, hydrology, and watershed conditions.

Channelization of the Columbia Slough has reduced the complexity of the habitat features and the connectivity with adjacent wetlands and sloughs. Refugia for migrating salmonids is present but not abundant (Ellis 2001). There is some large woody debris (LWD) present in the slough, but no comprehensive study had been done when the BA was written.

The riparian vegetation in the slough at the project site has been modified over the years by levee and dike construction and commercial and industrial development. According to Ellis (2001), the riparian area consists mostly of mature cottonwoods and no conifers. The cottonwoods along the bank provide some stabilization, but up to 10% of the bank is eroding. Within the lower slough, most of the riparian areas are connected and dominated by cottonwood with red-osier dogwood, Himalayan blackberry and Pacific willow (Ellis 2001). The disturbance in the watershed continues with road expansion and water management (Ellis 2001).

In the action area for the proposed project, the environmental baseline has been further degraded by human activity. This area consists of large industrial shipping facilities, including berths and dense roadways. There is some riparian vegetation present in the project area, but habitat function and erosion control would be increased with more planting in the riparian area. The industrialization of this area also contributes to the degraded conditions of the Willamette River,

including reduced water quality, increased water temperature, altered timing and quantity of runoff, decreased riparian cover, and habitat refugia.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The proposed project consists of path construction and vegetation planting. To provide benefits to salmonids, some of these actions may require short-term adverse effects.

Use of heavy equipment during construction creates the opportunity for accidental spills of fuel, lubricants, hydraulic fluid and similar contaminants into the riparian zone or water where they can injure or kill aquatic organisms. Discharge of construction water used for vehicle washing, concrete washout, and other purposes can carry sediments and a variety of contaminants to the riparian area and stream. Discharge of potentially harmful contaminants will be minimized by staging all equipment and fluids at least 150 feet away from the waterway.

Excavation has the potential to produce sedimentation in the adjacent areas of the Columbia Slough. Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (Birtwell *et al.* 1984, Scannell 1988). Adult and larger juvenile salmonids appear to be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjorn and Reiser 1991). However, research indicates that chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991).

Water quality could be affected by the increase in runoff from new impervious surface used to create the trail. The design will place the trail as far away as possible from the Columbia Slough. In addition, planting of native grasses, shrubs and trees will increase erosion control, infiltration of water and treatment of water before it could enter the slough. All plantings will be native varieties of trees, shrubs and seed mix. The plantings will improve habitat conditions including microclimate (light, temperature, humidity), contribution of organic matter and woody debris to the channel and resistance to erosion through root strength (Gregory *et al.* 1991). As the vegetation matures over time, it will contribute to the improvement of habitat functions. There are no anticipated adverse effects on salmonids from the planting of riparian vegetation.

1.5.2 Effects on Critical Habitat

NOAA Fisheries designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Effects on critical habitat from the proposed action are included in the effects description above.

1.5.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-Federal activities within the action area that would cause greater impacts to listed species than presently occurs. However, development of structures and vegetation clearing along the streams is likely to continue. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years**.**

1.6 Conclusion

NOAA Fisheries has determined, based on the available information, that the proposed action covered in this Opinion is not likely to jeopardize the continued existence of listed salmonids or adversely modify critical habitat. NOAA Fisheries used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries believes that the proposed action would cause a minor, short-term degradation of anadromous salmonid habitat due to turbidity caused by construction and fill and removal activities. Direct mortality is not expected. Best management practices for construction activities will minimize potential impacts from these activities. Furthermore, as the new riparian vegetation matures over time, it will contribute to the improvement of habitat functions including microclimate, erosion control and shelter for salmonids.

The proposed project is not expected to impair currently properly functioning habitat, appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

1.7 Reinitiation of Consultation

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded; (2) if the action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this biological opinion; (3) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. "Harass" is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. "Incidental take" is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement

2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of listed salmonids because of detrimental effects from increased turbidity levels and construction activity in the riparian area. Effects of actions such as the one covered by this Opinion are largely unquantifiable in the short term, and are not expected to be measurable as long term effects on habitat or population levels. Therefore, even though NOAA Fisheries expects some low level incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as "unquantifiable." Based on the information provided by the COE and other available information, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the action covered by this Opinion. The extent of the take is limited to the project area described above in section 1.3.

2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of listed salmonid species resulting from the action covered by this Opinion. The COE shall include, as part of the section 10 River and Harbors Act permit, measures that will:

1. Minimize the likelihood of incidental take from construction by applying permit conditions to avoid or minimize disturbance to riparian and aquatic systems.

2. Complete a comprehensive monitoring and reporting program to ensure this Opinion is meeting its objective of minimizing the likelihood of take from permitted activities.

2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the COE must require, as part of the section 10 Permit, that the applicant and/or their contractors comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (general conditions for construction, operation and maintenance), the COE shall ensure that:
    a. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
    b. Fish passage. Passage will be provided for any adult or juvenile salmonid species present in the project area during construction, and after construction for the life of the project.
    c. Pollution and Erosion Control Plan. A Pollution and Erosion Control Plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by COE or NOAA Fisheries.
        i. Plan Contents. The Pollution and Erosion Control Plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
            (1) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
            (2) Practices to confine, remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
            (3) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
            (4) A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
            (5) Practices to prevent construction debris from dropping into any stream or water body, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.

ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.[4]

(1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.

d. Construction discharge water. All discharge water created by construction (e.g., concrete washout, pumping for work area isolation, vehicle wash water) will be treated as follows:

i. Water quality. Facilities must be designed, built and maintained to collect and treat all construction discharge water using the best available technology applicable to site conditions. The treatment must remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities must not exceed 4-feet per second.

iii. Spawning areas, marine submerged vegetation. No construction discharge water may be released within 300-feet upstream of active spawning areas or areas with marine submerged vegetation.

e. Preconstruction activity. Before significant[5] alteration of the project area, the following actions must be completed:

i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.

(1) A supply of sediment control materials (*e.g.*, silt fence, straw bales[6]).

(2) An oil absorbing floating boom whenever surface water is present.

iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.

f. Heavy Equipment. Use of heavy equipment will be restricted as follows:

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[4] "Working adequately" means no turbidity plumes are evident during any part of the year.

[5] "Significant" means an effect can be meaningfully measured, detected or evaluated.

[6] When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally sized, rubber tires).

ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows:

(1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150-feet or more from any stream, water body or wetland.

(2) All vehicles operated within 150-feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by COE or NOAA Fisheries.

(3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

iii. Stationary power equipment. Stationary power equipment (*e.g.*, generators, cranes) operated within 150-feet of any stream, water body or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.

g. Site preparation. Native materials will be conserved for site restoration.

i. If possible, native materials must be left where they are found.

ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.

iii. Any large wood[7], native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.

h. Earthwork. Earthwork (including drilling, excavation, dredging, filling and compacting) will be completed as quickly as possible.

i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break in work unless construction will resume work within 7 days between June 1 and September 30, or within 2 days between October 1 and May 31.

ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.

[7] For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

i. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows:

i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.

ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation.

iii. Revegetation. Areas requiring revegetation must be replanted before the first April 15 following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.

iv. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.

v. Fertilizer. No surface application of fertilizer may occur within 50-feet of any stream channel.

vi. Fencing. Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

2. To implement Reasonable and Prudent Measure #2 (monitoring), the COE shall:

a. Implementation monitoring. Ensure that a monitoring report is sent to NOAA Fisheries within 120 days of project completion describing the permittee's success meeting his or her permit conditions. Each project level monitoring report will include the following information.

i. Project identification

(1) Permittee name, permit number, and project name.

(2) Category of activity

(3) Project location, including any compensatory mitigation site(s), by 5th field HUC and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map

(4) COE contact person.

(5) Starting and ending dates for work completed

ii. Narrative assessment. A narrative assessment of the project's effects on natural stream function.

iii. Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.[8]

(1) Include general views and close-ups showing details of the project and project area, including pre and post construction.

[8] Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

(2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.

iv. Other data. Additional project-specific data, as appropriate for individual projects.

(1) Work cessation. Dates work cessation was required due to high flows.

(2) A summary of pollution and erosion control inspections, including any erosion control failure, hazardous material spill, and correction effort.

(3) Site preparation.

a. Total cleared area – riparian and upland.

b. Total new impervious area.

(4) Site restoration.

a. Finished grade slopes and elevations.

b. Log and rock structure elevations, orientation, and anchoring (if any).

c. Planting composition and density.

d. A five-year plan to:

a. Inspect and, if necessary, replace failed plantings to achieve 100 percent survival at the end of the first year, and 80 percent survival or 80 percent coverage after five years (including both plantings and natural recruitment).

b. Control invasive non-native vegetation.

c. Protect plantings from wildlife damage and other harm.

d. Provide the COE annual progress reports.

(5) Long-term habitat loss. This will consist of the same elements as monitoring for site restoration.

b. Effectiveness monitoring. Gather any other data or analyses the COE deems necessary or helpful to complete an assessment of habitat trends in stream and riparian conditions as a result of COE permitted actions. The COE may use existing monitoring efforts for this purpose if those efforts can provide information specific to the objective of identifying habitat trends.

c. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the NOAA Fisheries Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; telephone: 360/418-4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by

Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

d. Monitoring reports will be submitted to:

NOAA Fisheries
Oregon Habitat Branch
Attn: 2002/00772
525 NE Oregon Street
Portland, OR 97232

3. MAGNUSON-STEVENS ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures

proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed fisheries within the waters of Washington, Oregon, and California. The designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line, and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km) (PFMC 1998a, 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border.

Detailed descriptions and identifications of EFH for the groundfish species are found in the Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to The Pacific Coast Groundfish Management Plan (PFMC 1998a) and the NOAA Fisheries Essential Fish Habitat for West Coast Groundfish Appendix (Casillas *et al.* 1998). Detailed descriptions and identifications of EFH for the coastal pelagic species are found in Amendment 8 to the Coastal Pelagic Species Fishery Management Plan (PFMC 1998b). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed action is detailed above in section 1.2. This area has been designated as EFH for various life stages of chinook and coho salmon and starry flounder (*Platyichthys stellatus*).

3.5 Effects of Proposed Action

As described in detail in section 1.5, the proposed activities may result in detrimental short-term adverse effects to a variety of habitat parameters. Excavation of river bank material could result in a temporary increase in turbidity and vegetation clearing for construction of the trail will decrease riparian cover.

3.6 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect the EFH for Pacific salmon species and starry flounder.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the COE and all of the Reasonable and Prudent Measures and the Terms and Conditions contained in Sections 2.2 and 2.3 are applicable to EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The COE must reinitiate EFH consultation with NOAA Fisheries if the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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